



SUSPENSE 7/14/04	ENGINEER WVD	LOGGED IN 6/29/04	TYPE Sw-933	APP NO. PWT
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NEW MEXICO OIL CONSERVATION DIVISION  
- Engineering Bureau -  
1220 South St. Francis Drive, Santa Fe, NM 87505

RECEIVED

JUN 29 2004

ABOVE THIS LINE FOR DIVISION USE ONLY

Oil Conservation Division  
100 S. Saint Francis Drive  
Santa Fe, NM 87505

**ADMINISTRATIVE APPLICATION CHECKLIST**

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

**Application Acronyms:**

- [NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]
- [DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
- [PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
- [WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
- [SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
- [EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

[1] **TYPE OF APPLICATION** - Check Those Which Apply for [A]

[A] Location - Spacing Unit - Simultaneous Dedication  
NSL NSP SD

Check One Only for [B] or [C]

[B] Commingling - Storage - Measurement  
DHC CTB PLC PC OLS OLM

[C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery  
WFX PMX SWD IPI EOR PPR

[D] Other: Specify \_\_\_\_\_

Elm Ridge's  
Carson WDW 242

[2] **NOTIFICATION REQUIRED TO:** - Check Those Which Apply, or \_ Does Not Apply

- [A] Working, Royalty or Overriding Royalty Interest Owners
- [B] Offset Operators, Leaseholders or Surface Owner
- [C] Application is One Which Requires Published Legal Notice
- [D] Notification and/or Concurrent Approval by BLM or SLO  
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office
- [E] For all of the above, Proof of Notification or Publication is Attached, and/or,
- [F] Waivers are Attached

*Get SWAB  
Test/Water Sample*

[3] **SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.**

[4] **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

**Note:** Statement must be completed by an individual with managerial and/or supervisory capacity.

Print or Type Name

Signature

Title

Date

BRIAN WOOD  
(505) 466-8120  
FAX 466-9682

*B. Wood*

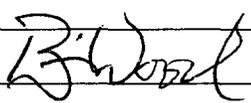
CONSULTANT

6-21-04

e-mail Address

brian@permitswest.com

**APPLICATION FOR AUTHORIZATION TO INJECT**

- I. PURPOSE: \_\_\_\_\_ Secondary Recovery \_\_\_\_\_ Pressure Maintenance XXX Disposal \_\_\_\_\_ Storage  
Application qualifies for administrative approval? XXX Yes \_\_\_\_\_ No
- II. OPERATOR: ELM RIDGE RESOURCES, INC.  
ADDRESS: P. O. BOX 189, FARMINGTON, NM 87499  
CONTACT PARTY: BRIAN WOOD c/o PERMITS WEST, INC. PHONE: 505 466-8120
- III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection.  
Additional sheets may be attached if necessary. XXX
- IV. Is this an expansion of an existing project? \_\_\_\_\_ Yes \_\_\_\_\_ No  
If yes, give the Division order number authorizing the project: \_\_\_\_\_
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
- VII. Attach data on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected;
  2. Whether the system is open or closed;
  3. Proposed average and maximum injection pressure;
  4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
  5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- \*VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any.
- \*X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).
- \*XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
- NAME: BRIAN WOOD TITLE: CONSULTANT  
SIGNATURE:  DATE: 6-21-04
- \* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal: \_\_\_\_\_

### III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

- (1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.
- (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
- (3) A description of the tubing to be used including its size, lining material, and setting depth.
- (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District Offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

- (1) The name of the injection formation and, if applicable, the field or pool name.
- (2) The injection interval and whether it is perforated or open-hole.
- (3) State if the well was drilled for injection or, if not, the original purpose of the well.
- (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
- (5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well, if any.

### XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells;
- (3) The formation name and depth with expected maximum injection rates and pressures; and,
- (4) A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

**NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.**

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**NOTICE:** Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

INJECTION WELL DATA SHEET

OPERATOR: ELM RIDGE RESOURCES, INC.

WELL NAME & NUMBER: CARSON WDW #242

WELL LOCATION: 719' ENL & 1802' FWL UNIT LETTER C SECTION 24 TOWNSHIP 25N RANGE 12W  
FOOTAGE LOCATION

WELLBORE SCHEMATIC

WELL CONSTRUCTION DATA  
Surface Casing

Hole Size: 12-1/4" Casing Size: 9-5/8" @ 400'  
Cemented with: 213 sx. or 251 ft<sup>3</sup>  
Top of Cement: SURFACE Method Determined: VISUAL

Intermediate Casing

Hole Size: . Casing Size: .  
Cemented with: . sx. or . ft<sup>3</sup>  
Top of Cement: . Method Determined: .

Production Casing

Hole Size: 8-3/4" Casing Size: 5-1/2" @ 7,100'  
Cemented with: 2,050 sx. or 2,385 ft<sup>3</sup>  
Top of Cement: SURFACE Method Determined: VISUAL & BOND LOG

Total Depth: 7,100'  
6,910' Injection Interval 6,990'  
feet to

9-5/8" 36# J-55 ST&C  
set @ 400' and cemented  
to surface with 100% excess



Packer @ 6,810'  
Perforate (0.43") from  
6,910' to 6,990' with  
4 shots per foot

5-1/2" 17# J-55 LT&C  
set @ 7,100' and cemented  
to surface with 30% excess

(Perforated or Open Hole; indicate which)



ELM RIDGE RESOURCES, INC.  
CARSON WDW #242  
719' FNL & 1802' FWL  
SEC. 24, T. 25 N., R. 12 W.  
SAN JUAN COUNTY, NEW MEXICO

PAGE 1

I. Purpose is water disposal.

II. Operator: Elm Ridge Resources, Inc.  
Operator phone number: (505) 632-3476  
Operator address: P. O. Box 189  
Farmington, NM 87499  
Contact: Brian Wood (Permits West, Inc.)  
Phone: (505) 466-8120

III. A. (1) Lease: BLM lease NMSF-078064  
Lease Size: 2,559.60 acres  
Lease Area: all Sections 1, 12, 13, & 24, T. 25 N., R. 12 W.  
Closest Lease Line: 1,802' (closest unit line: 4,904')  
Well Name & Number: Carson WDW #242  
Well Location: 719' FNL and 1802' FWL Sec. 24, T. 25 N., R. 12 W.  
(see Exhibit A)

A. (2) Surface casing (9-5/8", 36#, J-55, S T & C) will be set at  $\approx$ 400' in a 12-1/4" hole and cemented to the surface with  $\approx$ 213 sacks (100% excess) Class G cement + Flocele + CaCl<sub>2</sub>. Top will be determined by visual observation. Cement will be mixed at 15.6 pounds per gallon and 1.18 cubic feet per sack.

Production casing (5-1/2", 17#, J-55, L T & C) will be set at  $\approx$ 7,100' in a 8-3/4" hole and cemented to the surface with  $\approx$ 30% excess. Top will be determined by visual observation and bond log.

Production casing lead cement will be  $\approx$ 2,000 sacks BJ Hughes Premium light high strength + 10% gypsum + 5% polymer + 1/4 pound per sack cellophane mixed at 1.16 cubic feet per sack and 13.5 pounds per gallon. Will tail with  $\approx$ 50 sacks 50/50 Poz + gilsonite + Flocele + gel mixed at 15.4 pounds per gallon and 1.3 cubic feet per sack.

Mechanical integrity of the casing will be assured by hydraulically pressure testing and charting before perforating.

- A. (3) Tubing will be 2-7/8" 6.5# J-55 tuboscope lined injection string. It will be set at  $\approx 6,810'$  (disposal interval will be  $\approx 6,910'$  to  $\approx 6,990'$ ).
- A. (4) Arrow Set Model DB packer or its equivalent will be set at  $\approx 6,810'$  (which will be  $\approx 100'$  above top perforation).
  
- B. (1) Disposal zone will be the Entrada sandstone. Fracture gradient is expected to be a normal  $\approx 0.70$  psi per foot.
- B. (2) Disposal interval will be  $\approx 6,910'$  to  $\approx 6,990'$  (well logs will determine exact interval after drilling). It will be perforated (0.43") with four shots per foot.
- B. (3) Well has not yet been drilled. It will be drilled for the exclusive use by Elm Ridge and for the sole purpose of water disposal from present and future Elm Ridge wells. Water analyses from Elm Ridge wells in the Fruitland coal and Gallup sandstone are attached.
- B. (4) Well bore has not yet been perforated since it has not been drilled. It will be perforated from  $\approx 6,910'$  to  $\approx 6,990'$  (logs will determine exact interval after drilling).
- B. (5) Top of the Entrada is at  $\approx 6,900'$ . Oil is produced elsewhere in the San Juan Basin from the Entrada (e. g., Eagle Mesa). Closest Entrada production is a several dozen miles south. Bottom of the closest overlying actual productive formation (Gallup) is at  $\approx 4,990'$ . There will be a  $\approx 1,920'$  interval between the highest injection perforation and the bottom of the Gallup. Bottom of the closest overlying potentially productive formation (Dakota) is at  $\approx 5,900'$ . There will be a  $\approx 1,010'$  interval between the highest injection perforation and the bottom of the Dakota. There is no underlying productive formation within at least a dozen miles.

IV. This is not an expansion of an existing injection project. (Elm Ridge has a water flood in the Carson Unit, but it is in the Lower Gallup - not the Entrada.)

V. A map (Exhibit B) showing all 12 wells (11 P & A + 1 shallow SI WIW) within a

**ELM RIDGE RESOURCES, INC.  
 CARSON WDW #242  
 719' FNL & 1802' FWL  
 SEC. 24, T. 25 N., R. 12 W.  
 SAN JUAN COUNTY, NEW MEXICO**

half mile radius is attached. A map (Exhibit C) showing all 145 wells (109 P & A + 33 oil or gas + 2 water + 1 WIW) within a two mile radius is attached. According to the Office of the State Engineer, one water well (Section 11) is 102' deep and the other (Section 13) is 2,550' deep. The latter is a supply well for the Carson Unit water flood. Details on the wells within a half mile follow.

<u>OPERATOR</u>	<u>WELL</u>	<u>LOCATION (25n-12w)</u>	<u>ZONE</u>	<u>TD</u>	<u>STATUS</u>	<u>DISTANCE</u>
Elm Ridge	CU 13-24	SESW Sec. 13	Gallup	5031'	P & A	1,390'
Elm Ridge	CU 13-13	SWSW Sec. 13	Gallup	5040'	P & A	1,790'
Shell	CU 34-13	SWSE Sec. 13	Gallup	5104'	P & A	2,039'
Shell	CU 200	SWSE Sec. 13	PC	1330'	P & A	2,621'
Shell	CU 23-41	NENE Sec. 23	Gallup	5072'	P & A	2,463'
Shell	CU 24-21	NENW Sec. 24	Gallup	5013'	P & A	98'
Shell	CU 24-11	NWNW Sec. 24	Gallup	5015'	P & A	1,143'
Elm Ridge	CU 24-1	NWNE Sec. 24	Pt. Lookout	3815'	WIW	1,428'
Shell	CU 24-12	SWNW Sec. 24	Gallup	5006'	P & A	1,701'
Shell	CU 24-32	SWNE Sec. 24	Gallup	5012'	P & A	1,958'
Elm Ridge	CU 24 332	SWNE Sec. 24	Fruit. Coal	1330'	P & A	1,982'
Shell	CU 24-23	NESW Sec. 24	Gallup	4990'	P & A	2,587'

A map (Exhibit D) showing all leases (only BLM, and all within Elm Ridge's Carson Unit) within a half mile radius is attached. Details are:

<u>AREA (all T. 25 N., R. 12 W)</u>	<u>LESSOR</u>	<u>LEASE #</u>	<u>LESSEE(S)</u>
all Sections 13 & 24 et al	BLM	NMSF-078064	Elm Ridge Central Resources Ciniza Production Co. Cyprus Gas Corp Questar Explor. & Prod
all Section 14, E2E2 Sec. 23 et al	BLM	NMSF-078067	Elm Ridge Central Resources Ciniza Production Co. Cyprus Gas Corp Questar Explor. & Prod

A map (Exhibit E) showing all leases within a two mile radius is attached. Most leases are BLM. The remaining few are Navajo allotted. Almost all of the leases within a two mile radius are in Elm Ridge's Carson Unit.

**ELM RIDGE RESOURCES, INC.  
 CARSON WDW #242  
 719' FNL & 1802' FWL  
 SEC. 24, T. 25 N., R. 12 W.  
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VI. Twelve wells are within a half mile. None penetrated the Entrada. There is a 1,806' interval between the deepest (5,104') existing well (Carson Unit 34-13) within a half mile and the top of the highest proposed perforation ( $\approx$ 6,910').

<u>OPERATOR</u>	<u>WELL</u>	<u>LOCATION (25n-12w)</u>	<u>ZONE</u>	<u>TD</u>	<u>STATUS</u>	<u>DISTANCE</u>
Shell	CU 24-21	NENW Sec. 24	Gallup	5013'	P & A	98'
Shell	CU 24-11	NWNW Sec. 24	Gallup	5015'	P & A	1,143'
Elm Ridge	CU 13-24	SESW Sec. 13	Gallup	5031'	P & A	1,390'
Elm Ridge	CU 24-1	NWNE Sec. 24	Pt. Lookout	3815'	WIW	1,428'
Shell	CU 24-12	SWNW Sec. 24	Gallup	5006'	P & A	1,701'
Elm Ridge	CU 13-13	SWSW Sec. 13	Gallup	5040'	P & A	1,790'
Shell	CU 24-32	SWNE Sec. 24	Gallup	5012'	P & A	1,958'
Elm Ridge	CU 24 332	SWNE Sec. 24	Fruit. Coal	1330'	P & A	1,982'
Shell	CU 34-13	SWSE Sec. 13	Gallup	5104'	P & A	2,039'
Shell	CU 23-41	NENE Sec. 23	Gallup	5072'	P & A	2,463'
Shell	CU 24-23	NESW Sec. 24	Gallup	4990'	P & A	2,587'
Shell	CU 200	SWSE Sec. 13	PC	1330'	P & A	2,621'

- VII. 1. Average injection rate = 1,000 bwpd. Maximum rate = 2,000 bwpd.  
 2. System will be open (water will be trucked). Facilities will include six 300 barrel water tanks, 2 filtration units, 2 injection pumps, and a 30' x 40' building.  
 3. Average injection pressure = 1,200 psi Maximum pressure = 1,382 psi  
 4. Water source will be present and future Elm Ridge wells in the basin. Three produced water analyses (Exhibit F) are attached. A summary follows.

<u>Parameter</u>	<u>Fruitland</u>	<u>Gallup</u>	<u>Gallup</u>
Bicarbonates	752.6 ppm	497.7 ppm	389.6 ppm
Calcium	258.7 ppm	517.4 ppm	239.5 ppm
Chlorides	5,970.1 ppm	12,736.3 ppm	13,173.7 ppm
Hydrogen Sulfide	0 ppm	0 ppm	0 ppm
Iron	0 ppm	0 ppm	5 ppm
Magnesium	495.7	411.0 ppm	873.1 ppm
pH	7.5	7.8	7.4
Potassium	160.0 ppm	100.0 ppm	150.0 ppm
Resistivity	0.45 ohm/meter	0.75 ohm/meter	0.62 ohm/meter
Sodium	2,919.8 ppm	7,069.4 ppm	6,760.6 ppm
Sulfates	0 ppm	0 ppm	0 ppm
Specific Gravity @ 67° F	1.005	1.005	1.002
Total Dissolved Solids	10,557.40 ppm	21,332.65 ppm	21,592.05 ppm

No local sample exists from the Entrada. ~~Elm Ridge will try to swab load water back after stimulation and take an Entrada water sample.~~ If successful, then the analysis will be provided to the New Mexico Oil Conservation Division.

5. The Entrada has not been proven productive within two miles of the proposed well. Indeed, Elm Ridge drilled a wildcat Entrada well (Farfelu #1) 8,398' southeast in 19-25n-11w. It was unsuccessful as an Entrada well and was plugged back and completed in the Dakota.

In general, Entrada water near recharge zones (basin fringe) has a specific conductance of <1,500  $\mu$ mhos. Entrada water from deeper parts of the basin has a specific conductance of >10,000  $\mu$ mhos. Stone et al in Hydrogeology and water resources of San Juan Basin, New Mexico wrote, "Generally, however, water from the Entrada is not suitable for drinking, especially in deeper parts of the basin." Summaries of analyses of Entrada produced water follow. The samples (see Exhibit G) are from the Santa Fe 20 #1 in SW4NE4 20-21n-8w ( $\approx$ 30 miles southeast) and the Eagle Mesa #1 in SW4SW4 12-19n-4w ( $\approx$ 61 miles southeast).

<u>Parameter</u>	<u>Santa Fe 20 #1</u>	<u>Eagle Mesa #1</u>
Bicarbonate	2546 mg/l	1220 mg/l
Calcium	27 mg/l	160 mg/l
Chloride	903 mg/l	1773 mg/l
Iron	0.9 mg/l	0 mg/l
Magnesium	8 mg/l	49 mg/l
pH	7.73	7.32
Sodium	3228 mg/l	3726 mg/l
Sulfate	4400 mg/l	5000 mg/l
Specific Gravity	1.009	1.010
Total Dissolved Solids	11,114 mg/l	11,928 mg/l

VIII. The Entrada sandstone is a very porous and permeable *æolian* sandstone. It produces oil elsewhere in the basin (e.g., Eagle Mesa, Leggs, Media, Ojo Encino,

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Papers Wash, Snake Eyes Fields). It is estimated to be 100' thick in the well bore. Top is  $\approx 6,900'$  and bottom is  $\approx 7,000'$ . Estimated well bore formation tops are:

Nacimiento: 0'  
Fruitland formation: 1,150'  
Pictured Cliffs Sandstone: 1,332'  
Lewis Shale: 1,415'  
Cliff House Sandstone: 1,582'  
Allison Menefee Formation: 2,081'  
Point Lookout Sandstone: 3,716'  
Mancos Shale: 3,862'  
Gallup: 4,779'  
Sanostee: 5,225'  
Dakota: 5,675'  
Morrison: 5,900'  
Entrada: 6,900'  
Chinle Shale: 7,000'  
Total Depth: 7,100'

There are 2 water wells within a 2 mile radius. One is over a half mile northeast in Section 13 and is 2,550' deep. It is a water supply well for the unit water flood. The second is over a mile northwest in Section 11 and is 102' deep. It is a domestic supply well.

No existing underground drinking water sources are below the Entrada within a two mile radius. There will be  $\approx 4,350'$  of vertical separation between the bottom of the lowest existing underground water source and the top of the Entrada.

IX. The well will be stimulated with  $\approx 150,000$  pounds 20/40 Ottawa sand with Ambormax gel. ✓

X. CNL/FDC, IES logs will be run. Copies will then be provided to the NMOCD. ✓

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XI. There are no water wells within two miles which penetrate the Entrada. There will be  $\approx 4,350'$  of vertical separation between the bottom of the lowest existing underground water source and the top of the Entrada. There is also  $\approx 114'$  of oil bearing water flooded Gallup sandstone between the bottom of the water well and the top of the Entrada. ✓

XII. Elm Ridge is not aware of any geologic or engineering data which may indicate the Entrada is in hydrologic connection with any underground sources of water. There will be  $\approx 4,350'$  of vertical separation between the top ( $\approx 6,900'$ ) of the Entrada and the bottom ( $2,550'$ ) of the closest water well. This includes  $\approx 920'$  of Mancos shale.

XIII. Notice (this application) has been sent to the surface owner (BLM), operators of all wells (only Elm Ridge), and lease operating right holders (Elm Ridge, Central, Ciniza, Cyprus, and Questar), and lessors (only BLM) within a half mile. A legal ad (see Exhibit H) was published on June 16, 2004.

DISTRICT I  
P.O. Box 1980, Hobbs, N.M. 88241-1980

State of New Mexico  
Energy, Minerals & Natural Resources Department

Form C-102  
Revised February 21, 1994  
Instructions on back  
Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

DISTRICT II  
P.O. Drawer DD, Artesia, N.M. 88211-0719

OIL CONSERVATION DIVISION

P.O. Box 2088  
Santa Fe, NM 87504-2088

AMENDED REPORT

DISTRICT III  
1000 Rio Brazos Rd., Aztec, N.M. 87410

DISTRICT IV  
PO Box 2088, Santa Fe, NM 87504-2088

WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number <b>30-045-</b>		<sup>2</sup> Pool Code .	<sup>3</sup> Pool Name <b>SWD; ENTRADA</b>
<sup>4</sup> Property Code .	<sup>5</sup> Property Name <b>CARSON UNIT WDW</b>		<sup>6</sup> Well Number <b>242</b>
<sup>7</sup> OGRID No. <b>149052</b>	<sup>8</sup> Operator Name <b>ELM RIDGE RESOURCES, INC.</b>		<sup>9</sup> Elevation <b>6425</b>

<sup>10</sup> Surface Location

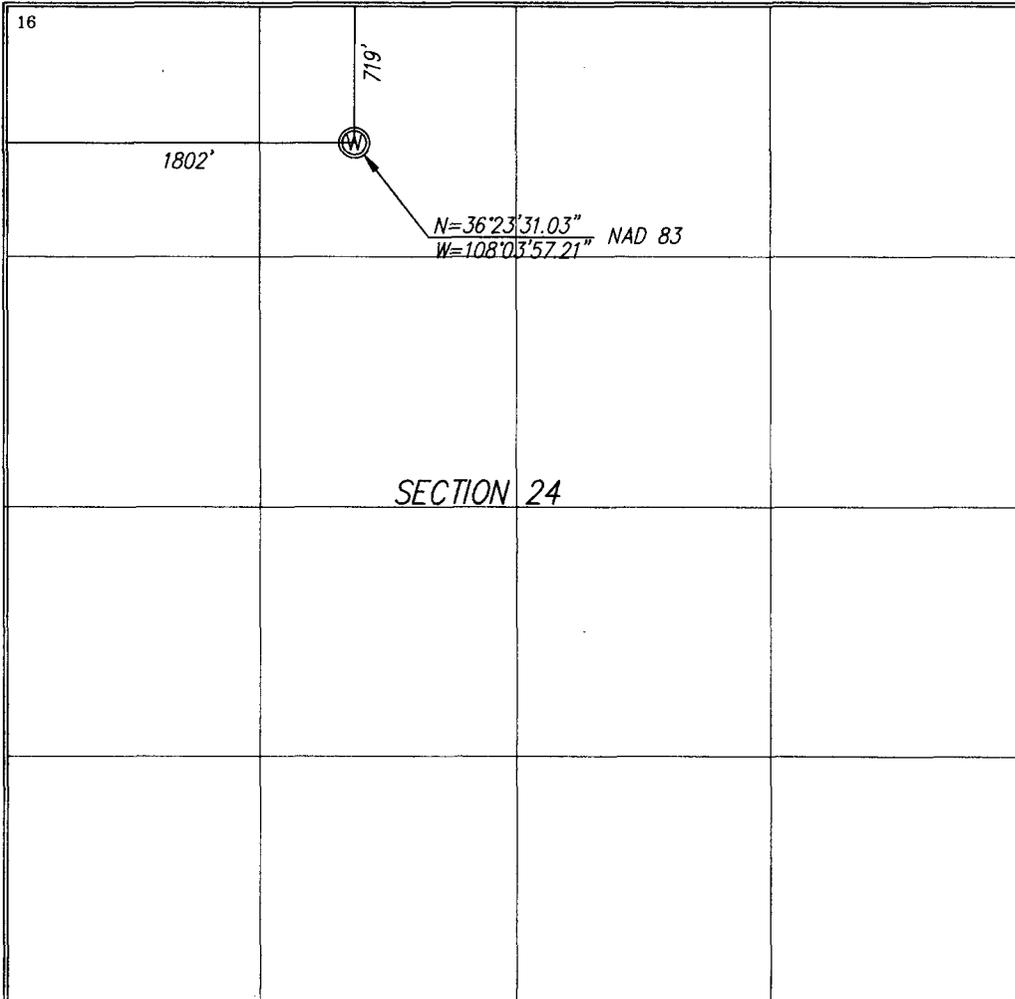
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
	24	25N	12W	C	719	NORTH	1802	WEST	SAN JUAN

<sup>11</sup> Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

<sup>12</sup> Dedicated Acres .	<sup>13</sup> Joint or Infill .	<sup>14</sup> Consolidation Code .	<sup>15</sup> Order No. .
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



**17 OPERATOR CERTIFICATION**  
I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief

*Brian Wood*  
Signature  
**BRIAN WOOD**  
Printed Name  
**CONSULTANT**  
Title  
**JUNE 21, 2003**  
Date

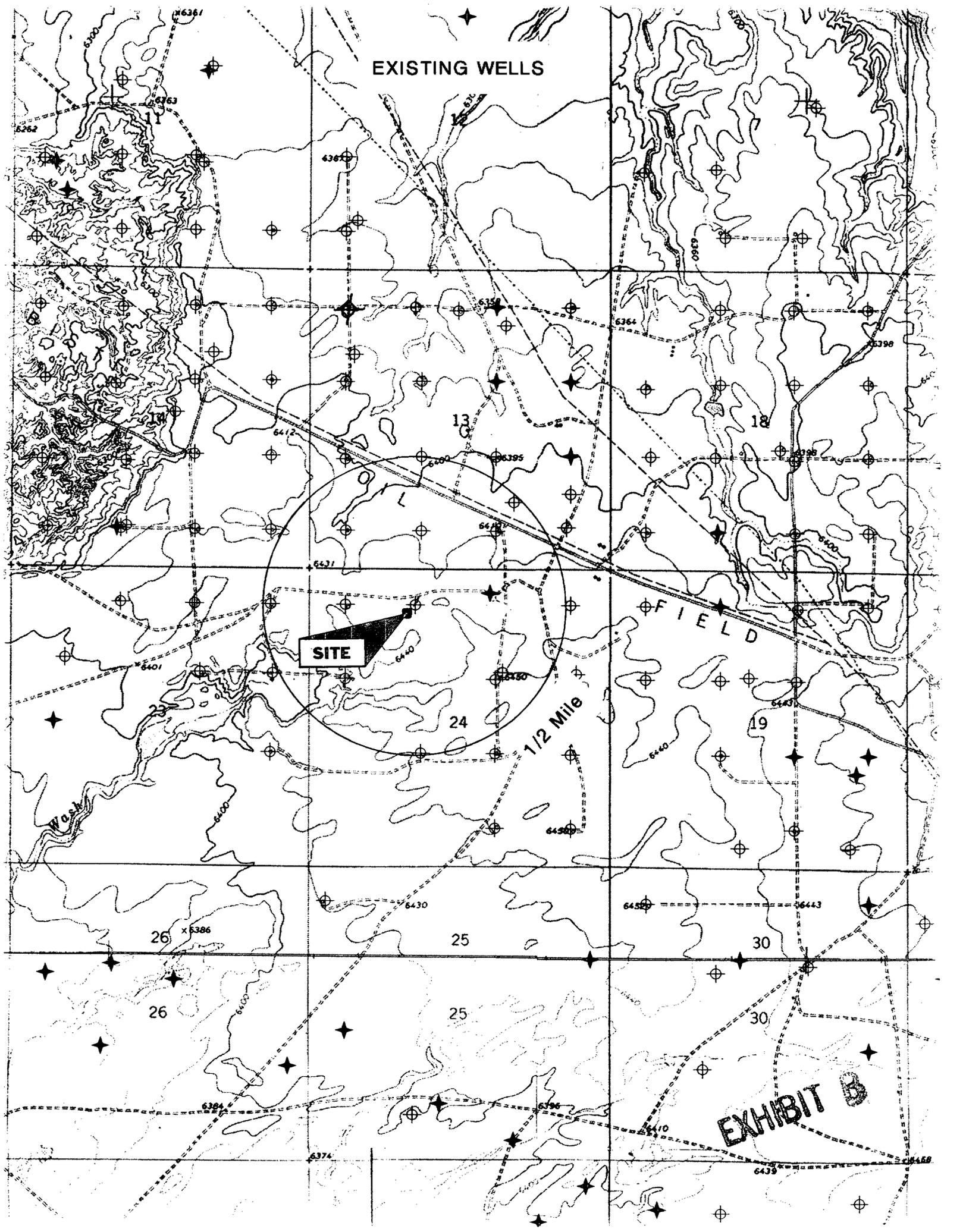
**18 SURVEYOR CERTIFICATION**  
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

**APRIL 4, 2002**  
Date of Survey

Signature and Seal of Professional Surveyor:  
*Edgar L. Risenhoover*  
Certificate No. **5979**  
NEW MEXICO PROFESSIONAL SURVEYORS

**EXHIBIT A**

EXISTING WELLS



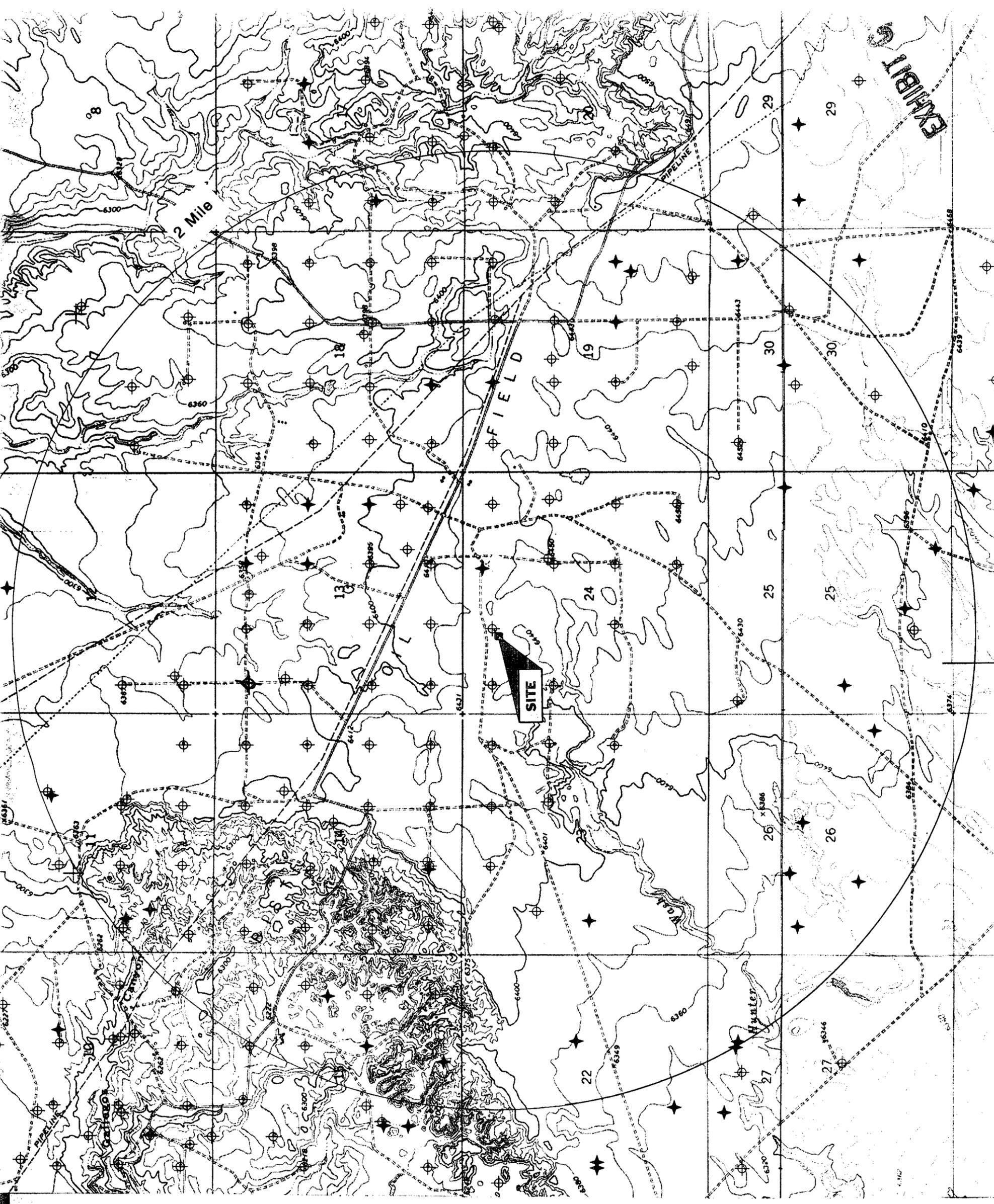
SITE

1/2 Mile

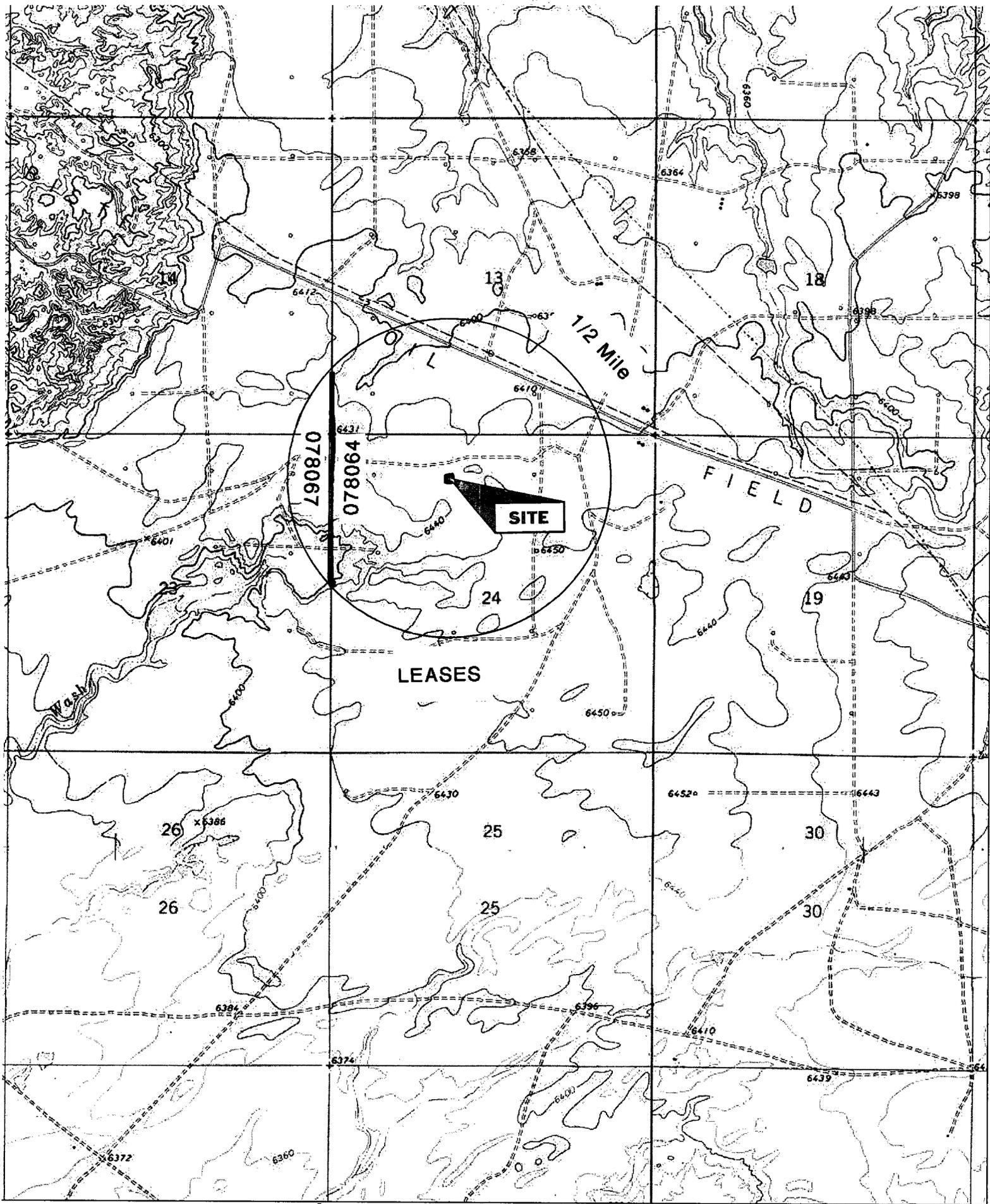
FIELD

EXHIBIT B

EXHIBIT 3



EXISTING WELLS



↑ MN  
11°

0 1000 FEET 0 500 1000 METERS

Map created with TOPO!® ©2003 National Geographic (www.nationalgeographic.com/topo)

**EXHIBIT D**



2 Mile

Allot.

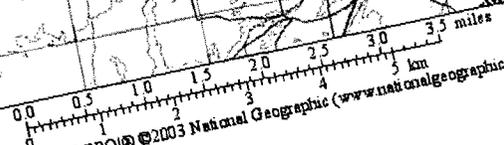
SITE

BLM

Allot.

FIELD

LESSORS



Map created with TOPOID ©2003 National Geographic (www.nationalgeographic.com/topo)

EXHIBIT



## American Energy Services

### Water Analysis Results Sheet

Farmington NM  
 708 S. Tucker  
 Phone: (505) 325-4192  
 Fax: (505) 564-3524  
 Zip: 87401

Operator:	Elm Ridge	Date:	October 15, 2002
Well :	B.C. 28-1	District:	Farmington
Formation:	Coal	Requested by:	Tim Duggan
County:	San Juan	Technician:	Mike Brown
Depth:	1200	Source:	Well

### PHYSICAL AND CHEMICAL DETERMINATION

SPECIFIC GRAVITY: 1.005 AT 67 Degrees F.

pH:	7.5	SULFATES:	0 ppm
IRON:	0 ppm	CALCIUM:	258.7 ppm
H <sub>2</sub> S:	0 ppm	BICARBONATES:	752.6 ppm
MAGNESIUM:	495.7 ppm	RESISTIVITY:	0.45 ohm/meter
		CHLORIDES:	5970.1 ppm
		SODIUM :	2919.8 ppm
		POTASSIUM:	160.0 ppm
		TDS:	10557.4 ppm

CaCO<sub>3</sub> Scale Tendency = Remote

CaSO<sub>4</sub> Scale Tendency = Remote

REMARKS:

Data contained in this document is based on the best information & most current test procedures and materials available. No liability is expressed or implied.

EXHIBIT E



## American Energy Services

### Water Analysis Results Sheet

Farmington NM

708 S. Tucker

Phone:(505)325-4192

Fax:(505)564-3524

Zip:87401

Operator:	Elm Ridge	Date:	October 15, 2002
Well :	C.T.B.	District:	Farmington
Formation:	Gallup	Requested by:	Tim Duggan
County:	San Juan	Technician:	Mike Brown
Depth:	4800	Source:	Well

### PHYSICAL AND CHEMICAL DETERMINATION

SPECIFIC GRAVITY: 1.005 AT 67 Degrees F.			
pH:	7.8	SULFATES:	0 ppm
IRON:	0 ppm	CALCIUM:	517.4 ppm
H2S:	0 ppm	BICARBONATES:	497.7 ppm
MAGNESIUM:	411.0 ppm	RESISTIVITY:	0.75 ohm/meter
		CHLORIDES:	12736.3 ppm
		SODIUM :	7069.4 ppm
		POTASSIUM:	100.0 ppm
		TDS:	21332.65 ppm

CaCO3 Scale Tendency = Remote

CaSO4 Scale Tendency = Remote

REMARKS:

Data contained in this document is based on the best information & most current test procedures and materials available. No liability is expressed or implied.

EXHIBIT E

### American Energy Services

#### Water Analysis Results Sheet

Farmington NM

708 S. Tucker

Phone: (505)325-4192

Fax: (505)564-3524

Zip: 87401



Operator:	Elm Ridge	Date:	October 15, 2002
Well :	<del>Joe Hixon #1</del> Joe Hixon #1	District:	Farmington
Formation:	<del>N/A</del> SESW 22-25N-12W	Requested by:	Tim Duggan
County:	San Juan	Technician:	Mike Brown
Depth:	4800	Source:	Well

#### PHYSICAL AND CHEMICAL DETERMINATION

SPECIFIC GRAVITY: 1.002 AT 67 Degrees F.			
pH:	7.4	SULFATES:	0 ppm
IRON:	5 ppm	CALCIUM:	239.5 ppm
H2S:	0 ppm	BICARBONATES:	389.6 ppm
MAGNESIUM:	873.1 ppm	RESISTIVITY:	0.62 ohm/meter
		CHLORIDES:	13173.7 ppm
		SODIUM :	6760.6 ppm
		POTASSIUM:	150.0 ppm
		TDS:	21592.05 ppm

CaCO3 Scale Tendency = Remote

CaSO4 Scale Tendency = Remote

REMARKS:

Data contained in this document is based on the best information & most current test procedures and materials available. No liability is expressed or implied.

# EXHIBIT F

4-5 MILES AWAY - INJECTION INTO THE MORRISON/ENTRAPP



**CORE LABORATORIES, INC.**  
*Petroleum Reservoir Engineering*  
 DALLAS, TEXAS  
**WATER ANALYSIS**

RECEIVED

MAR 25 1977

Minerals Management Inc.

File WA - 5

Company Dome Petroleum Corp. Well Name Sante Fe 20 No. 1 Sample No. SS-2  
 Formation \_\_\_\_\_ Depth \_\_\_\_\_ Sampled From \_\_\_\_\_  
 Location Sec 20 T 21N R 8W Field \_\_\_\_\_ County San Juan State N.M.  
 Date Sampled 3-9-77 Date Analyzed 3-13-77 Engineer RGC

Total Dissolved Solids 11,114.5 mg/L

Sp. Gr. 1.009 @ 70 °F.

Resistivity 1.0 ohm-meters @ 70 °F.

Hydrogen Sulfide Present

pH 7.73

Constituents	meq/L	mg/L	Constituents	meq/L	mg/L
Sodium	<u>140.44</u>	<u>3228.7</u>	Chloride	<u>25.47</u>	<u>903.0</u>
Calcium	<u>1.35</u>	<u>27.0</u>	Bicarbonate	<u>41.73</u>	<u>2546.0</u>
Magnesium	<u>0.73</u>	<u>8.9</u>	Sulfate	<u>91.61</u>	<u>4400.0</u>
Iron	<u>0.03</u>	<u>0.9</u>	Carbonate	<u>ND</u>	<u>ND*</u>
Barium	<u>ND</u>	<u>ND</u>	Hydroxide	<u>ND</u>	<u>ND</u>

\*ND = Less than 0.1 mg/L

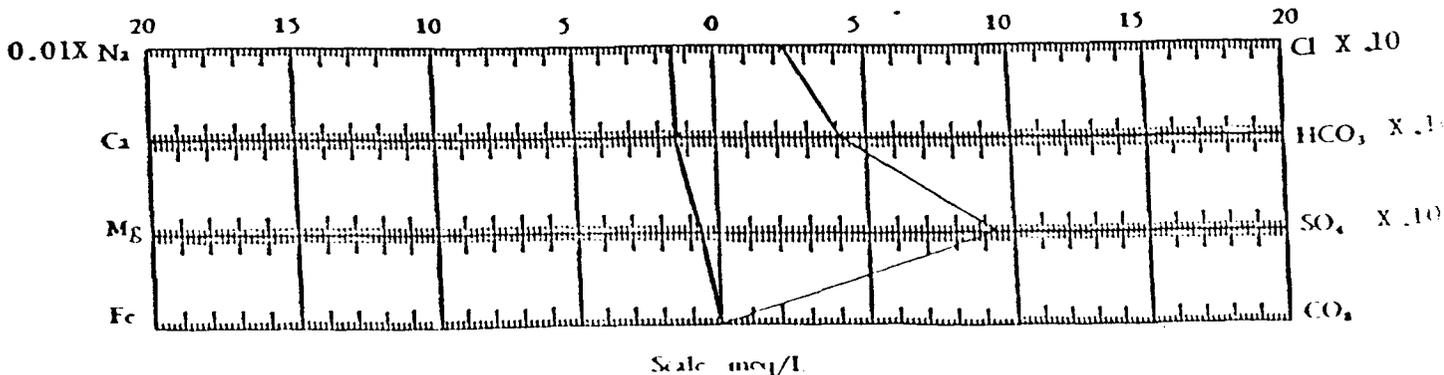


EXHIBIT G

THE WESTERN COMPANY OF NORTH AMERICA

API WATER ANALYSIS

Company: MERRION  
 Field:  
 Well: #1  
 Depth:  
 Formation: ENTRADA?  
 State:  
 County:

W.C.N.A. Sample No.: S106995  
 Legal Description:  
 Lease or Unit: EAGLE MESA  
 Water.B/D:  
 Sampling Point:  
 Sampled By: STEVE DUNN  
 Date Sampled: 05/03/95

Type of Water(Produced,Supply, ect.): PROD.

PROPERTIES

pH: 7.32	Iron, Fe(total): 0
Specific Gravity: 1.010	Sulfide as H2S: 0
Resistivity (ohm-meter): .81	Total Hardness:
Tempature: 64F	(see below)

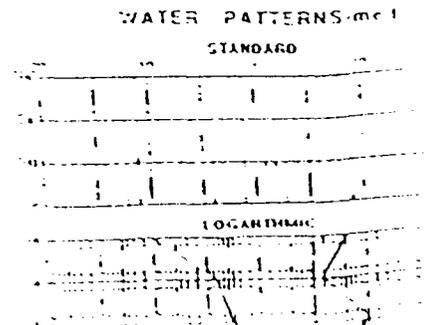
D I S S O L V E D SOLIDS

CATIONS		mg/l	me/l		
Sodium, Na:	3726	:	162		
Calcium, Ca:	160	:	8	Sample(ml):	1.0 ml of EDTA: .40
Magnesium, Mg:	49	:	4	Sample(ml):	1.0 ml of EDTA: .20
Barium, Ba:	N/A	:	N/A		
Potassium, K:		:			
ANIONS		mg/l	me/l		
Chloride, Cl:	1773	:	50	Sample(ml):	1.0 ml of AgNO3: .10
Sulfate, SO4:	5000	:	104		
Carbonate, CO3:		:		Sample(ml):	1.0 ml of H2SO4:
Bicarbonate, HCO3:	1220	:	20	Sample(ml):	1.0 ml of H2SO4: .20
Total Dissolved Solids (calculated): 11928					
Total Hardness: 600				Sample(ml):	1.0 ml of EDTA: .60

REMARKS AND RECOMMENDATIONS:

ENTRADA WATER

EXHIBIT G



**AFFIDAVIT OF PUBLICATION**

**Ad No. 50034**

**STATE OF NEW MEXICO  
County of San Juan:**

**COPY OF PUBLICATION**

CONNIE PRUITT, being duly sworn says:  
That she is the CLASSIFIED MANAGER of  
THE DAILY TIMES, a daily newspaper of  
general circulation published in English at  
Farmington, said county and state, and that  
the hereto attached Legal Notice was  
published in a regular and entire issue of the  
said DAILY TIMES, a daily newspaper duly  
qualified for the purpose within the meaning of  
Chapter 167 of the 1937 Session Laws of the  
State of New Mexico for publication and  
appeared in the Internet at The Daily Times  
web site on the following day(s):

Wednesday, June 16, 2004.

And the cost of the publication is \$31.91.

Connie Pruitt

ON 6-16-04 CONNIE PRUITT  
appeared before me, whom I know personally  
to be the person who signed the above  
document.

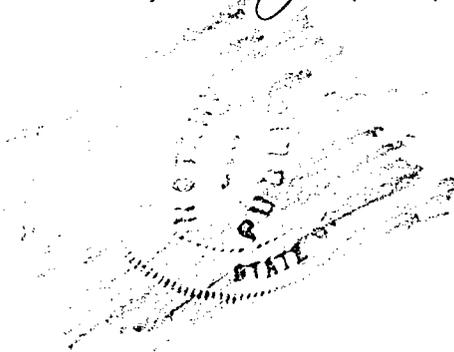
Ginny Beck  
My Commission Expires April 2, 2008.

918 Legals  
**NOTICE**

Elm Ridge Resources, Inc. is applying to drill the Carson WDW #242 as a water disposal well. The Carson WDW #242 will be located at 719' FNL & 1802' FWL, Sec. T. 25 N., R. 12 W., San Juan County, NM. The well will dispose of water produced from oil and gas wells into the Entrada sandstone at a depth of 6,910' to 6,990' at a maximum rate of 2,000 barrels of water per day and at a maximum pressure of 1,382 psi. Interested parties must file objections or requests for hearing with the NM Oil Conservation Division, 1220 South Saint Francis Dr., Santa Fe, NM 87505 within 15 days. Additional information can be obtained by contacting Brian Wood, Permits West, Inc., 37 Verano Loop, Santa Fe, NM 87508. Phone number is (505) 466-8120.

Legal No. 50034 published in The Daily Times, Farmington, New Mexico on Wednesday, June 16, 2004.

[www.daily-times.com](http://www.daily-times.com)



**EXHIBIT H**

**PERMITS WEST**, INC.  
 PROVIDING PERMITS for LAND USERS  
 47 Arroyo Loop, Santa Fe, New Mexico 87508 (505) 466-8120

June 21, 2004

BLM  
 1235 LaPlata Highway  
 Farmington, NM 87401

As required by New Mexico Oil Conservation Division Rules, I am notifying you of the following proposed water disposal well. This letter is a notice only. No action is needed unless you have questions or objections.

Elm Ridge Resources, Inc. is applying (see attached application) to drill its Carson #242 WDW water disposal well.

Well Name: Carson WDW #242 Total Depth: 7,100'

Proposed Disposal Zone: Entrada (from ~6,910' to ~6,990')

Location: 719' FNL & 1802' FWL Sec. 24, T. 25 N., R. 12 W.,  
 San Juan County, NM on a state lease

Approximate Location: ~23 air miles south-southwest of Bloomfield, NM

Applicant Name: Elm Ridge Resources, Inc. (505) 632-3476

Applicant's Address: P. O. Box 189, Farmington, NM 87499

Submittal Information: Application for a water disposal well will be filed with the NM Oil Conservation Division. If they determine the application complies with the applicable regulations, then it will be approved. The New Mexico Oil Conservation Division address is 1220 South St. Francis Dr., Santa Fe, NM 87505. Their phone number is (505) 476-3440.

Please call me if you have any questions.

Sincerely,

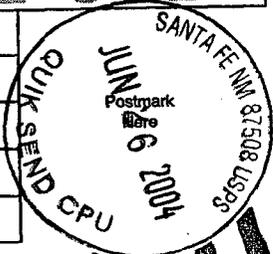
*Brian Wood*  
 Brian Wood

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Postage	\$ 3.95
Certified Fee	2.30
Return Receipt Fee (Endorsement Required)	1.75
Restricted Delivery Fee (Endorsement Required)	
<b>Total Postage &amp; Fees</b>	<b>\$ 8.00</b>



Sent To: BLM  
 Street, Apt. No.: 1235 LaPlata Hwy  
 Or PO Box No.: Farmington NM 87401

2587 5442 2000 0175 5102

**PERMITS WEST, INC.**  
 PROVIDING PERMITS for LAND USERS  
 17 Verano Loop, Santa Fe, New Mexico 87508 (505) 466-8120

June 21, 2004

Central Resources Inc.  
 1775 Sherman St.  
 Denver, Co. 80203-4313

As required by New Mexico Oil Conservation Division Rules, I am notifying you of the following proposed water disposal well. This letter is a notice only. No action is needed unless you have questions or objections.

Elm Ridge Resources, Inc. is applying (see attached application) to drill its Carson #242 WDW water disposal well.

Well Name: Carson WDW #242 Total Depth: 7,100'

Proposed Disposal Zone: Entrada (from ≈6,910' to ≈6,990')

Location: 719' FNL & 1802' FWL Sec. 24, T. 25 N., R. 12 W.,  
 San Juan County, NM on a state lease

Approximate Location: ≈23 air miles south-southwest of Bloomfield, NM

Applicant Name: Elm Ridge Resources, Inc. (505) 632-3476

Applicant's Address: P. O. Box 189, Farmington, NM 87499

Submittal Information: Application for a water disposal well will be filed with the NM Oil Conservation Division. If they determine the application complies with the applicable regulations, then it will be approved. The New Mexico Oil Conservation Division address is 1220 South St. Francis Dr., Santa Fe, NM 87505. Their phone number is (505) 476-3440.

Please call me if you have any questions.

Sincerely,



Brian Wood

7 000 0000 2000 2492 4342 1107

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<b>OFFICIAL USE</b>	
Postage	\$ 1.06
Certified Fee	2.30
Return Receipt Fee (Endorsement Required)	1.75
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 5.11



Sent To:	Central Res.
Street, Apt. No., or PO Box No.	1775 Sherman Denver
City, State, ZIP+4	

PS Form 3800, June 2002 See Reverse for Instructions

# PERMITS WEST, INC.

PROVIDING PERMITS for LAND USERS

37 Aztec Loop, Santa Fe, New Mexico 87508

(505) 466-8120

June 21, 2004

Ciniza Production Co.  
Giant Expl. & Prod. Co.  
Giant Mid-Continent  
P. O. Box 12999  
Scottsdale, Az. 85267-2999

As required by New Mexico Oil Conservation Division Rules, I am notifying you of the following proposed water disposal well. This letter is a notice only. No action is needed unless you have questions or objections.

Elm Ridge Resources, Inc. is applying (see attached application) to drill its Carson #242 WDW water disposal well.

Well Name: Carson WDW #242 Total Depth: 7,100'

Proposed Disposal Zone: Entrada (from ≈6,910' to ≈6,990')

Location: 719' FNL & 1802' FWL Sec. 24, T. 25 N., R. 12 W.,  
San Juan County, NM on a state lease

Approximate Location: ≈23 air miles south-southwest of Bloomfield, NM

Applicant Name: Elm Ridge Resources, Inc. (505) 632-3476

Applicant's Address: P. O. Box 189, Farmington, NM 87499

Submittal Information: Application for a water disposal well will be filed with the NM Oil Conservation Division. If they determine the application complies with the applicable regulations, then it will be approved. The New Mexico Oil Conservation Division address is 1220 South St. Francis Dr., Santa Fe, NM 87505. Their phone number is (505) 476-3440.

Please call me if you have any questions.

Sincerely,

Brian Wood

7003 3110 0002 2943 1114

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<b>OFFICIAL USE</b>	
Postage	\$ 2.00
Certified Fee	2.30
Return Receipt Fee (Endorsement Required)	1.15
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 5.45
Sent To: <u>Ciniza Prod</u>	
Street, Apt. No., or PO Box No. <u>P.O. Box 12999</u>	
City, State, ZIP+4 <u>Scottsdale AZ 85267-2999</u>	
PS Form 3800, June 2002 See Reverse for Instructions	

**PERMITS WEST, INC.**  
 PROVIDING PERMITS for LAND USERS  
 El Verano Loop, Santa Fe, New Mexico 87508 (505) 466-8120

June 21, 2004

Cyprus Gas Corp.  
 P. O. Box 3299  
 Englewood, CO 80155-3299

As required by New Mexico Oil Conservation Division Rules, I am notifying you of the following proposed water disposal well. This letter is a notice only. No action is needed unless you have questions or objections.

Elm Ridge Resources, Inc. is applying (see attached application) to drill its Carson #242 WDW water disposal well.

Well Name: Carson WDW #242 Total Depth: 7,100'  
Proposed Disposal Zone: Entrada (from ≈6,910' to ≈6,990')  
Location: 719' FNL & 1802' FWL Sec. 24, T. 25 N., R. 12 W.,  
 San Juan County, NM on a state lease  
Approximate Location: ≈23 air miles south-southwest of Bloomfield, NM  
Applicant Name: Elm Ridge Resources, Inc. (505) 632-3476  
Applicant's Address: P. O. Box 189, Farmington, NM 87499

Submittal Information: Application for a water disposal well will be filed with the NM Oil Conservation Division. If they determine the application complies with the applicable regulations, then it will be approved. The New Mexico Oil Conservation Division address is 1220 South St. Francis Dr., Santa Fe, NM 87505. Their phone number is (505) 476-3440.

Please call me if you have any questions.

Sincerely,

*Brian Wood*  
 Brian Wood

7003 3110 0002 2943 1138

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**OFFICIAL USE**

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Certified Fee	230
Return Receipt Fee (Endorsement Required)	175
Restricted Delivery Fee (Endorsement Required)	
<b>Total Postage &amp; Fees</b>	<b>\$ 511</b>

Postmark Here  
 JUN 21 2004  
 SANTA FE, NM 87508 USPS

Sent To *Cyprus Corp*  
 Street, Apt. No. or PO Box No. *POB 3299*  
 City, State, ZIP+4 *Englewood CO 80155-3299*

PS Form 3800 June 2002 See Reverse for Instructions

**PERMITS WEST, INC.**  
 PROVIDING PERMITS for LAND USERS  
 17 Volano Loop, Santa Fe, New Mexico 87508 (505) 466-8120

June 21, 2004

Chuck Snure  
 Questar Expl. & Prod. Co.  
 1050 17th St., Suite 500  
 Denver, Co. 80265

Dear Chuck,

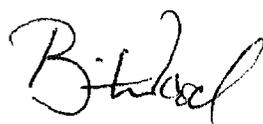
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Please call me if you have any questions.

Sincerely,  
  
 Brian Wood

7002 3170 0000 2000 2942 2443 1121

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<b>OFFICIAL USE</b>	
Postage	\$ 106
Certified Fee	230
Return Receipt Fee (Endorsement Required)	175
Restricted Delivery Fee (Endorsement Required)	
<b>Total Postage &amp; Fees</b>	<b>\$ 511</b>



Sent To	CHUCK SNURE - QUESTAR
Street, Apt. No. or PO Box No.	1050 17TH #500
City, State, ZIP+4	Den CO 80265